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ABSTRACT

This study hypothesizes that: (1) stereotypic attitudes which normal persons hold toward handicapped persons will be multidimensional; (2) some of the multidimensional components will be general across all handicaps while others will be specific to each handicap; and (3) those components of stereotypic attitudes towards handicapped persons which are general across all handicaps will also be components of stereotypic attitudes toward normal people. Some 176 subjects were administered a questionnaire which consisted of 10 concepts (Blind Person, Deaf Person, Amputee, etc., as well as "Me" and "People I Like"); each of these utilized the same 25 bi-polar word pairs which had seven point ranges. The data were submitted to a principle component factor analysis. The results strongly supported the three hypotheses. (TL)

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Similarity of factorial composition of normal and handicapped person concepts[1]

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This paper investigated the number and similarity of factors involved in two types of normal and eight types of handicapped person concepts. The 176 subjects in the study responded to the same 25 semantic differential word pairs for each of the 10 concepts. Ten factor analysis were done and the loadings on five factors of each concept were rotated to maximum similarity between concepts as well as maximum simple structure. Although all the concepts involved three common factors, there was considerable difference between normal and handicapped person concepts on them. It is speculated that the existence of minor, concept-specific factors may provide the key to common factor differences. More research should be aimed at determining the type and degree of concept-specific factor influence.

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Similarity of factorial composition of normal and handicapped person concepts[1]

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Introduction

An individual who is afflicted with a physical or mental handicap faces problems in personal and social adjustment which are greater than those faced by a normal person. Beside the obvious problems of the inherent limitations imposed by a handicap, there is the question of whether the larger society is willing to extend social acceptance to a person who deviates from the common norm. In many cases the physical problems of a handicap play a minor role as compared to the social problems imposed by others.

Social acceptance itself is not a cut-and-dried, all-or-nothing sort of thing. It is established in degrees, and the degree of acceptance varies with both the individual and his environment. The social acceptance which is extended to an individual by a person or group of persons tends to be based, at least in part, on 1) past experiences or information concerning the individual or similar individuals and 2) present perception of the individual. These are inter-related, each influencing the other in highly variable ways. Acceptance is likely to be greatest when past experiences and information of the respondent or respondents have been good and when the present perception has qualities which are considered desirable. On the other hand, the degree of acceptance is seldom high if good past experiences

have been few, if information is sparse, and if the present perception is unattractive.

Consideration of a handicapped person in light of the above discussion does not paint a very favorable picture. By the definition used here a handicapped person is a non-normal individual. Since the majority of society is normal, very few persons have had extensive experience with a wide variety of handicapped person types. Normal individuals who meet a handicapped person generally have little past experience and information to apply to the situation. Further, an unusual perceptual image projected by the handicapped person may be far from reassuring. If no solid experiences or information are available, the normal person must base his reaction on his stereotype of a particular handicap. In the context used here, a stereotype of a handicapped person is defined as the role which an individual expects an unfamiliar handicapper person to fill.

One of the greatest problems a handicapped person has in gaining social acceptance is in overcoming initial stereotype-based interactional awkwardness. This awkwardness stems largely from the uncertainity and inaccuracy of a normal person's stereotype of an anomaly. If a stereotype has fitted similar past situations and appears to fit the present situation, the respondent will have confidence in the ability of the stereotype to cope with the unfamiliar aspects of a situation. However, if the stereotype does not appear to fit the situation and if the perception of the situation is riddled with contradictions of what is expected, the respondent is likely to feel awkward,

unprepared, and unsure. This is often the case in interaction with handicapped people.

Over the years a considerable number of studies have been conducted to assess the attitudes and reactions that normal individuals have towards handicapped persons. Many of these studies have concentrated on a single handicap. Although blindness has been the most frequently investigated disability in regard to stereotypic attitudes (Siller and Chipman, 1967, P. 3), a number of other disabilities have also been studied. These have included mental retardation, mental illness, deafness, amputation, and cerebral palsy.

Much of the research mentioned above appears to be split into two schools of thought. What is probably the older of the two schools treats stereotypic attitudes toward the handicap as having a single dimension. Studies using this approach typically attempt to express attitudes toward a disability in terms of a single score. Differences in reaction to different disabilities are viewed as variations along the single dimension. This approach has been carried out using a wide variety of psychometric techniques.

The most successful attempt at a single-score measure of stereotypic attitudes toward the handicapped is the "Attitudes Toward Disabled Persons" (ATDP) scale of Yuker, Block, and Younng (1966). The ATDP is presumed to measure the general attitude of an individual towards handicapped persons. Since its first introduction in the mid-1950's the ATDP scale has been notably successful in generating research interest. It has been used as a measuring instrument in a number of studies but the results have

not always been consistent. As Siller and Chipman (1967, p. 28) point out, "....the ATDP is factorially mixed and is probably best thought of as a rough measure of an affect dimension of attitudes."

In recent years the validity of the unidimension single-score approach to the measurement of stereotypic attitudes toward disabled persons has been questioned with increasing frequency. Jerome Siller and his associates have been especially critical of the unidimensional approach and have stated explicitely that"....attitudes toward the disabled are multidimensional, measurable, a function of type and severity of the disability, specific experiences with handicapped persons and possibly certain individual personality determinants" (Siller and Chipman, 1964).

Although the emphasis in research is away from the establishment of unidimensional measures and towards the development of multidimensional measures, there are few studies designed to statistically determine the component dimensionality of the basic attitudes and whether the composition of these attitudes is common to all handicaps. Further, there has apparently been little research to compare the dimensions of stereotypic attitudes towards handicapped people with those towards normal people.

The semantic differential method of measuring connotative meaning (Osgood, et al, 1957) can be used to study the multidimensionality of attitudes toward the handicapped. The usual outcome of factor analysis with this instrument is three factors: evaluation, activity, and potency. If these factors are consistently present in attitudes towards handicapped

people it may be possible to use them as the basis of a specific handicapped person factor structure. Such a factor structure could help integrate and systemize future research dealing with handicapped people. In view of this and questions arising from the preceding paragraphs, three specific hypotheses are proposed:

1) The stereotypic attitudes which normal persons hold towards specific kinds of handicapped persons will be multidimensional.

2) Some of the multidimensional components of stereotypic attitudes towards handicapped persons will be general across all handicaps while other components will be specific to each handicap.

3) Those components of stereotypic attitudes towards handicapped persons which are general across all handicaps will also be components of stereotypic attitudes towards normal people. They will be identifiable as evaluation, activity, and potency.

Method

The 176 subjects in this study were all students in introductory psychology classes at either the University of Washington (N = 79) or a junior college in Southern California (N = 97). Their mean age was 20.2 years with a range of 15 to 43 years. Of the total, 153 subjects were single, 19 were married, and 4 were either divorced or widowed.

The subjects were administered a questionnaire which consisted of 10 semantic differential concepts. Eight of the concepts involved a specific type of handicapped person. These concepts were 1) Blind Person,

2) Deaf Person, 3) Amputee, 4) Mentally Retarded Person, 5) Mentally Ill Person, 6) Stuttererer, 7) Cerebral Palsied Person, and 8) Facially Disfigured Person. In addition, hypotheses 3 implies that those attitudinal components which are applied to all handicapped person stereotypes will also be applied to stereotypes of normal people. However, the concept "Normal Person" seemed too general to be compared with specific handicaps. Hence, the concepts of "Me" and "People I Like" were used as being specific concepts of normal persons. This is justifiable on the grounds that even if a person or his friends are handicapped, they will connotatively think of themselves as being normal. That is, a person tends to think of himself and those around him whom he likes as being usual and acceptable.

Each of the 10 concepts utilized the same 25 bi-polar word pairs. These were: 1) hard-soft, 2) sociable-unsociable, 3) unstable-stable, 4) colorless-colorful, 5) clean-dirty, 6) masculine-feminine, 7) weak-strong, 8) interesting-uninteresting, 9) heavy-light, 10) active-passive, 11) negative-positive, 12) excited-calm, 13) free-not free, 14) sharp-dull, 15) graceful-awkward, 16) bad-good, 17) large-small, 18) wise-foolish, 19) beautiful-ugly, 20) violent-gentle, 21) simple-complex, 22) cowardly-brave, 23) aimless-motivated, 24) valuable-worthless, and 25) sad-happy. The response to each word pair had a seven point range.

A principle component factor analysis was performed on the data from each of the ten concepts. In deciding how many factors would be retained for rotation, the objective was to find the minimal number of factors

which, for all 10 concepts, would 1) account for a reasonably large amount of the total variance in the responses to each concept and 2) include all factors which seemed to significantly influence the concepts being investigated. It was finally decided to retain 5 factors of each concept for further investigation.

The problem which remained was how to rotate the 5 factors from each of the 10 concepts in such a way that the rotated factor loading matrices would be maximally similar and still conform to the basic criteria of simple structure. The procedure of simply rotating each factor loading matrix with varimax, as is usually done, was rejected because the results would not be maximally similar among each of the 10 concepts. It was brought to our attention by Paul Horst that a method was available (Bloxom, 1968) which would rotate the loading matrices from different factor analyses to varimax simple structure and maximum similarity. This method was subsequently applied to our data.

The similarities between the rotated factors for each concept were compared both visually and by means of the Wrigley-Neuhaus (1955) coefficient of factorial similarity. An attempt was made to determine which factors were common to all concepts and which could be considered concept-specific.

Results

The means for the semantic differential bipolar word pair responses from the 176 subjects are given in Table 1. The standard deviations associated with these means indicated that the subjects were usually in

considerable agreement concerning each concept and w0rd pair. The standard deviations ranged from .897 to 2.189 with a mode of approximately 1.5.

The maximally similar rotated loadings from each of the five factor analyses were matched across concepts. The matching loadings for each factor are presented in Tables 2 through 6. The last row of each of these tables gives the percentages of total data variance accounted for by each factor in each concept. The total amount of data variance accounted for by 5 factors ranged from 50.3 percent for "Blind" to 67.5 percent for "Cerebral Palsy."

Examination of the factor loadings in Table 2 shows that the first factor loads highly on eight word pairs for all ten concepts. These word pairs are unstable-stable, colorless-colorful, weak-strong, negative-positive, bad-good, cowardly-brave, aimless-motivated, and sad-happy. The loadings on the violent-gentle and simple-complex word pairs indicate that they have some influence but are not of major importance. Factor 1 clearly loads on word pairs which reflect an evaluative character.

Factor 2 loadings in Table 3 load heavily on seven word pairs across all concepts. Three word pairs load to a lesser degree but still contribute some weight to the factor. The seven major word pairs are clean-dirty, interesting-uninteresting, sharp-dull, graceful-awkward, wise-foolish, beautiful-ugly, and valuable-worthless. The three minor word pairs are sociable-unsociable, active-passive, and free-not free. The word pairs associated with factor 2 are indicative of physical and mental activity.

The classical potency factor of Osgood (1957) is indicated by the factor 3 loadings given in Table 4. This factor is supported by the masculine-feminine, heavy-light, and large small word pairs. The word pairs hard-soft and violent-gentle also load fairly well for some, but not all, concepts.

After the first three factors, the similarity of the concepts in terms of the remaining two factors becomes much less clear cut. The factor 4 loadings given in Table 5 show that this factor loads highly for all concepts on only the excited-calm and violent-gentle word pairs. Further, factor 5, whose loadings are given in Table 6, loads consistently only on the simple-complex word pair and even for this word pair "Amputee" provides a glaring exception with its .13 loading.

The above results definitely support the three hypotheses proposed in the introduction. Stereotypic attitudes which normal persons hold towards various kinds of handicapped persons are multidimensional. These attitudes appear to involve three common factors reporesenting evaluation, activity, and potency and at least two factors which are concept-specific.

Further evidence for hypothesis 3 is given in Table 7. This table shows the Wrigley-Nehaus coefficients of factorial similarity between "Me" and all other concepts for each of the five factors. In effect, these coefficients are the cosines between factor loading vectors. Coefficient values can range from +1.0 to -1.0, with negative values meaning that the positive pole of one factor agrees most closely with the negative pole of the other factor. A zero coefficient would indicate orthogonal factors.

The coefficients in Table 7 show that factors 1 and 2 of "Me" are

are almost identical to factors 1 and 2 of the other 9 concepts. Factor 3, while having lower coefficient values than factors 1 and 2, is still very similar across all concepts. Examination of the coefficients for factors 4 and 5 indicate values which are lower and much more variable. Curiously, "Me" and "Mentally Retarded" are very similar on factor 5 while "Me" and "Amputee" are nearly orthogonal for that factor.

Discussion

It is apparent from the results that the first three factors are common to all ten concepts. However, the means of the high loading word pairs indicate that the positions of the concepts may vary widely on the bipolar scales. To give an extreme example, "People I Like" has a mean of 5.38 on the unstable-stable word pair as compared to 1.83 for "Mentally Ill."

The high loading word pairs for factor 1 (evaluation) show that handicapped people are thought to be less stable, weaker, less positive, less good, less motivated, and less happy than either "Me" or "People I Like." However, "Blind," "Deaf," and "Amputee" are considered braver than "Me." It is possible that this reflects a certain amount of admiration for someone who attempts to cope with a handicap through artificial means; blind persons use canes and seeing-eye dogs, deaf persons use hearing aids and learn to lip read, amputees master the use of artificial limbs.

The high loadings on factor 2 (activity) show that handicapped persons are considered to be dirtier, less interesting, duller, more

awkward, more foolish, more ugly, and less valuable than either "Me" or "People I Like." The exception here is "Blind", which is considered more interesting and wiser than "Me."

Factor 2 also has three word pairs which have significant but not high loadings. These demonstrate that handicapped persons are thought to be very unsociable, passive, and not-free. Perhaps the wide diversity between these three word pairs on the two normal and eight handicapped concepts may have combined with the maximum similarity rotation criterion to prevent higher loadings.

The third factor (potency) seems to be more consistent across the means of the high loading word pairs than any of the other factors in this study. There is little evidence to indicate differences in potency associated with the concepts. This is somewhat surprising, since clinically-oriented psychologists have traditionally insisted that castration images are involved in the concept of amputation.

Only two word pairs load highly on all concepts on factor 4. These are excited-calm and violent-gentle. Blind, deaf, and amputated persons are calmer than "Me" or "People I Like" while retarded, mentally ill, and stuttering people are thought of as being much more excited than these two normal types. With the exception of "Mentally Ill," the respondents felt that all concepts tended to be gentle. Apparently those with mental handicaps are thought to be more excitable than physically handicapped persons but this excitability is not necessarily associated with violence.

Consistent similartiy among the concepts on factor 4 stops with the two word pairs mentioned above. Deaf, blind, amputee, and cerebral palsied persons are specifically characterized as soft, passive, and not free. Mentally ill persons are soft and unstable while mentally retarded persons are unsociable and uninteresting.

Factor 5 is even more concept-specific than factor 4. Only the simple-complex word pair loads consistently on the concepts and here "Amputee" is an exception. It seems rather obvious that the very low similarity coefficient between "Me" and "Amputee" on factor 5, as given in Table 7, is caused by the low loading of "Amputee" on the simple-complex word pair.

The implications of the things mentioned above can now be brought into perspective with the problem of multidimensional measurement of attitudes towards handicapped persons. There is little doubt that such attitudes are complex and multidimensional. The important finding is that the major dimensions used to determine the concepts of various handicapped people appear to be the same as those involved in the concepts of "Me" and "People I Like." Although the three major dimensions may be the same, the scale positions of concepts on these dimensions demonstrate a wide gap between normal and handicapped people. The effects of this gap on the overall concept are likely to be further confounded by the existence of a number of minor concept-specific factors.

It is suspected that a large part of the gap between normal and handicapped concepts on the three major dimensions is attributable to fear; fear of the incapacity the handicap represents and fear of not

being able to cope with that incapacity in another person. The nature of the type of threat which each handicap presents may be hidden in the minor, concept-specific factors. The specific factor 4 suggests one basis for the fear; a dangerous and/or overactive behavioral manifestation. Although the concept-specific factors in themselves account for a minority of the total concept, they may be the key which determines variations in the social acceptability of handicapped people. A great deal of additional research work is needed to determine what specific factors are involved in each handicapped person concept and to determine how these factors exert influence on the concept as a whole. Once this is done, ways may be developed to measure the effects of these minor factors on the concepts held by a given individual. When measurement is possible, interaction training of the handicapped by a behavioral modification technique may follow.

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Table I

Means of Bipolar Word Pairs on Concepts*

	Me	People I Like	Deaf	Blind	Stutterer	Cerebral Palsy	Mentally Ill	Mentally Retarded	Amputee	Facially Disfigured
hard-soft	4.34	4.42	4.16	4.25	4.23	4.51	3.72	4.86	3.23	3.07
sociable-unsociable	2.86	2.15	4.47	3.42	4.65	4.24	5.07	4.20	3.94	4.90
unstable-stable	4.71	5.38	4.01	4.24	3.56	3.14	1.83	2.38	3.78	3.24
colorless-colorful	5.14	5.78	4.34	3.86	4.27	3.69	3.65	3.67	4.31	3.81
clean-dirty	2.24	2.02	2.91	2.77	3.06	3.28	3.79	3.94	3.08	3.44
masculine-feminine	3.66	3.41	3.69	3.92	3.74	3.89	3.94	4.03	3.15	3.33
weak-strong	4.94	5.32	4.32	3.97	3.54	2.72	3.11	3.09	4.63	4.37
interesting-uninteresting	2.69	1.65	3.50	2.59	3.50	3.46	3.47	3.72	3.11	3.24
heavy-light	4.20	3.90	3.88	4.14	3.92	3.96	3.88	3.85	3.70	3.66
active-passive	2.47	2.01	3.81	4.11	3.92	4.51	4.02	4.20	3.80	3.82
negative-positive	4.89	5.56	4.18	4.42	3.82	3.57	3.08	3.42	3.98	3.29
excited-calm	3.70	3.68	4.33	5.07	2.80	3.72	2.69	2.83	4.07	3.84
free-not free	2.76	2.05	4.36	4.82	4.14	5.13	5.24	4.70	4.39	4.33
sharp-dull	2.74	2.08	3.82	2.82	3.74	3.99	4.14	5.08	3.38	3.58
graceful-awkward	3.22	2.69	3.95	4.45	4.56	5.46	4.52	5.47	4.67	4.16
bad-good	5.11	5.36	4.47	4.70	4.28	3.99	3.68	4.04	4.37	3.85
large-small	3.88	3.73	3.94	4.30	4.00	4.04	3.97	4.05	3.74	3.72
wise-foolish	3.06	2.38	3.37	2.74	3.70	3.70	4.55	4.77	3.43	3.60
beautiful-ugly	3.17	2.73	3.81	3.77	3.75	4.07	4.01	4.33	4.13	4.86
violent-gentle	4.75	4.93	4.62	5.40	4.32	4.44	3.14	3.89	3.98	3.55
simple-complex	5.16	4.86	4.32	4.58	4.45	4.07	4.91	3.53	4.62	4.50
cowardly-brave	4.65	5.10	4.69	5.24	3.92	4.28	3.55	3.82	4.98	4.49
aimless-motivated	5.40	5.74	4.74	5.42	4.45	4.02	3.35	3.02	4.61	4.11
valuable-worthless	2.45	2.10	2.99	2.76	3.14	3.45	3.87	3.78	2.90	3.15
sad-happy	5.29	5.77	3.86	3.97	3.57	3.23	2.73	4.03	3.59	2.73

* 1 to 7 scale

Table 2

Loadings of Each of 10 Concepts on Factor I

	Me	People I Like	Deaf	Blind	Stutterer	Cerebral Palsy	Mentally Ill	Mentally Retarded	Amputee	Facially Disfigured
hard-soft	.17	.43	.18	.32	.42	.53	.13	.19	.19	.40
sociable-unsociable	-.11	.05	-.19	-.29	-.25	-.06	-.21	-.29	-.12	.05
unstable-stable	.74	.77	.60	.62	.68	.52	.49	.56	.65	.68
colorless-colorful	.62	.74	.50	.58	.75	.68	.41	.49	.76	.66
clean-dirty	-.03	-.06	-.26	-.16	-.04	-.05	.11	-.02	-.01	.24
masculine-feminine	-.00	.07	-.07	-.03	.02	.22	.03	.11	.00	.12
weak-strong	.77	.88	.58	.60	.74	.72	.63	.51	.78	.70
interesting-uninteresting	-.12	-.13	-.17	-.27	-.28	-.03	-.13	-.13	-.13	-.08
heavy-light	.18	.45	.13	.14	.28	.21	.08	.06	.29	.29
active-passive	-.34	.04	-.25	-.43	-.32	-.14	-.19	-.34	-.26	-.16
negative-positive	.76	.82	.69	.63	.77	.76	.73	.70	.73	.70
excited-calm	.17	.29	.20	.23	.25	.32	.26	.16	.31	.37
free-not free	-.15	-.04	-.27	-.17	-.21	.01	-.12	-.19	-.07	-.08
sharp-dull	.04	-.10	-.03	-.37	-.13	.02	.07	-.17	-.17	.03
graceful-awkward	-.02	.07	-.11	-.20	-.12	.23	.01	.04	-.07	.10
bad-good	.64	.77	.72	.35	.60	.68	.56	.54	.63	.49
large-small	.15	.31	.02	.08	.18	.33	.17	.15	.24	.33
wise-foolish	.00	-.14	-.15	-.03	-.08	.11	-.05	-.02	-.07	.10
beautiful-ugly	.08	.16	-.18	-.15	.09	.07	.13	-.09	.05	.18
violent-gentle	.32	.62	.48	.47	.41	.58	.52	.40	.37	.43
simple-complex	.31	.53	.39	.32	.30	.43	.23	.26	.32	.36
cowardly-brave	.74	.82	.64	.57	.65	.67	.71.	.68	.76	.76
aimless-motivated	.74	.84	.75	.63	.68	.73	.68	.61	.78	.77
valuable-worthless	-.21	-.12	-.30	-.30	-.13	-.00	-.20	-.10	-.18	-.03
sad-happy	.77	.76	.65	.46	.74	.79	.64	.62	.61	.68
Percent of total Concept variance acct'd. for	18.80	25.94	17.00	14.97	19.60	20.36	14.66	13.81	19.79	18.88

Table 3

Loadings of each of 10 Concepts on Factor 2

	Me	People I Like	Deaf	Blind	Stutterer	Cerebral Palsy	Mentally Ill	Mentally Retarded	Amputee	Facially Disfigured
hard-soft	.10	.13	.02	-.04	.01	.25	-.02	.04	-.05	-.12
sociable-unsociable	.41	.58	.55	.42	.51	.79	.47	.32	.65	.64
unstable-stable	-.17	.01	-.11	.05	-.04	-.08	-.05	-.14	-.19	-.01
colorless-colorful	-.23	.04	-.21	-.14	-.14	-.17	-.13	-.34	-.15	-.16
clean-dirty	.46	.49	.55	.68	.57	.65	.69	.60	.66	.68
masculine-feminine	.10	.16	.12	.13	.22	.48	.29	.27	.15	.18
weak-strong	-.10	.02	-.30	.06	.10	-.04	.12	.11	.02	.33
interesting-uninteresting	.72	.66	.65	.67	.67	.82	.58	.68	.70	.77
heavy-light	.15	.34	-.12	-.05	.25	.24	.06	.00	.17	.21
active-passive	.37	.57	.51	.34	.50	.53	.37	.49	.58	.55
negative-positive	-.09	-.08	-.25	-.34	-.17	-.02	-.16	-.15	-.28	-.09
excited-calm	.14	.16	-.07	.21	.19	.19	.14	-.02	.19	.18
free-not free	.37	.63	.39	.48	.54	.61	.45	.35	.67	.59
sharp-dull	.73	.63	.67	.44	.74	.80	.64	.66	.71	.77
graceful-awkward	.65	.80	.67	.48	.68	.65	.73	.72	.77	.77
bad-good	-.13	-.09	-.13	-.48	-.07	.31	-.06	-.12	-.12	-.03
large-small	.04	.33	.07	.04	.30	.31	.25	.16	.32	.24
wise-foolish	.69	.70	.67	.70	.73	.75	.74	.79	.75	.82
beautiful-ugly	.63	.75	.75	.61	.71	.75	.66	.74	.71	.74
violent-gentle	-.01	.02	-.10	-.20	-.17	.20	-.16	-.17	-.15	-.08
simple-complex	-.12	.11	-.08	.07	.09	.11	-.12	-.13	.12	.19
cowardly-brave	-.03	-.08	-.09	-.18	-.12	.08	-.06	-.00	.17	.12
aimless-motivated	.04	.01	-.15	-.21	-.17	-.05	-.23	-.39	-.14	-.05
valuable-worthless	.67	.70	.63	.48	.70	.78	.69	.78	.67	.80
sad-happy	-.08	-.13	-.21	-.35	-.29	.16	.23	-.01	-.30	-.05
Percent of total concept variance accounted for	14.67	18.63	16.38	14.54	18.31	23.48	16.66	17.97	21.16	22.28

Table 4

Loadings of Each of 10 Concepts on Factor 3

	Me	People I Like	Deaf	Blind	Stutterer	Cerebral Palsy	Mentally Ill	Mentally Retarded	Amputee	Facially Disfigured
hard-soft	.61	.40	.31	.08	.21	.25	.11	.48	.38	.37
sociable-unsociable	-.15	-.19	-.05	.26	.18	-.02	.21	-.07	.00	.16
unstable-stable	.07	.11	.02	-.10	-.13	.52	-.08	-.08	.20	.17
colorless-colorful	.36	.21	.24	-.11	.12	.43	.15	.33	.12	.41
clean-dirty	-.06	.08	.01	.16	.30	.28	-.05	.24	-.02	-.02
masculine-feminine	.76	.73	.60	.46	.78	.70	.69	.55	.81	.83
weak-strong	-.21	-.04	-.17	-.02	-.18	.03	-.14	-.49	-.13	-.18
interesting-uninteresting	.15	.12	-.02	.22	.34	-.01	.01	-.15	.24	.16
heavy-light	.65	.38	.72	.76	.64	.76	.70	.68	.70	.79
active-passive	.26	.04	.18	.21	.27	.42	.51	.32	.30	.46
negative-positive	.12	.25	.13	.11	.00	.28	.09	.19	.17	.19
excited-calm	-.12	.10	.30	.10	-.11	.24	.04	.19	.06	.12
free-not free	.22	-.00	.03	.05	.11	.39	.51	.27	-.12	.21
sharp-dull	.10	.31	-.22	.22	.12	.13	.24	.35	.23	.09
graceful-awkward	-.04	.00	.12	-.08	.08	.32	.30	.24	-.05	.08
bad-good	.36	.17	-.01	.22	.16	.03	.52	.45	.21	.54
large-small	.72	.62	.66	.64	.72	.62	.71	.58	.47	.74
wise-foolish	.20	.34	.05	-.08	.01	.26	.17	.12	.14	.18
beautiful-ugly	-.16	-.13	.13	.09	.20	.23	-.05	-.04	-.04	.01
violent-gentle	.56	.24	.32	.16	.38	.33	.29	.37	.40	.48
simple-complex	.12	.04	.34	.18	.21	.13	.47	.18	.03	.28
cowardly-brave	-.08	.06	.13	.03	.19	.26	.13	.05	-.11	.05
aimless-motivated	.03	.10	.05	.09	.22	.17	.09	.19	.06	.07
valuable-worthless	.01	.17	.10	-.15	.10	.13	-.10	-.11	.15	.09
sad-happy	.16	.35	.05	-.05	.13	-.04	-.23	.07	.36	.24
Percent of total concept variance accounted for	11.28	7.56	7.89	6.60	9.46	11.97	11.81	10.59	8.91	13.24

Table 5

Loadings of Each of 10 Concepts on Factor 4

	Me	People I Like	Deaf	Blind	Stutterer	Cerebral Palsy	Mentally Ill	Mentally Retarded	Amputee	Facially Disfigured
hard-soft	.26	.14	.43	.49	.33	.40	.71	-.08	.61	.58
sociable-unsociable	.38	.31	.32	.05	.13	.19	-.09	.49	-.01	-.20
unstable-stable	.17	.13	-.35	.03	.05	-.10	.46	.33	.18	.24
colorless-colorful	-.02	-.21	-.32	-.10	-.13	.08	-.02	-.08	.02	-.00
clean-dirty	-.16	-.03	-.10	-.12	-.27	-.29	-.22	-.11	-.01	-.16
masculine-feminine	-.11	.23	.13	-.03	-.03	.04	-.04	.26	.14	.04
weak-strong	.14	.01	-.05	-.37	-.32	-.33	-.02	.09	-.03	-.11
interesting-uninteresting	.10	.34	.20	-.03	.00	.05	.17	.40	.04	.08
heavy-light	.13	-.10	.33	-.08	.12	.14	.22	.01	-.04	.09
active-passive	.39	.40	.48	.56	.48	.40	.31	.44	.31	.21
negative-positive	-.09	.04	-.04	-.05	.13	.05	.01	-.01	.05	.20
excited-calm	.75	.73	.43	.55	.66	.49	.65	.76	.65	.67
free-not free	-.10	.25	.47	.49	.09	.48	-.02	.27	.49	.31
sharp-dull	-.10	.22	.39	.15	.10	-.01	.16	.07	.05	.22
graceful-awkward	-.05	-.08	-.10	.35	-.08	.28	-.05	-.25	.13	-.01
bad-good	.25	.17	.13	.27	.39	.20	.13	.01	.26	.26
large-small	.08	-.04	-.16	.30	-.09	.24	.07	-.00	.08	.22
wise-foolish	-.23	-.09	-.20	-.22	.28	-.10	-.07	-.18	-.02	-.09
beautiful-ugly	.36	-.10	-.13	-.24	-.22	.10	-.03	-.09	.11	.05
violent-gentle	.49	.33	.44	.50	.59	.46	.39	.43	.59	.54
simple-complex	.17	-.20	-.05	-.07	-.18	.35	-.15	-.13	.29	.27
cowardly-brave	.18	.15	.16	.21	-.06	.33	.09	-.12	.10	.08
aimless-motivated	-.14	.00	.14	.27	-.09	.27	.08	.11	.08	.10
valuable-worthless	.24	.02	-.16	.18	.04	-.01	.06	.13	-.08	.05
sad-happy	-.04	.03	-.21	-.19	.21	-.14	.04	-.02	-.13	-.11
Percent of total concept variance accounted for	6.85	5.52	7.60	8.51	7.07	7.11	6.46	7.25	7.08	6.78

Table 6

Loadings of Each of 10 Concepts on Factor 5

	Me	People I Like	Deaf	Blind	Stutterer	Cerebral Palsy	Mentally Ill	Mentally Retarded	Amputee	Facially Disfigured
hard-soft	-.20	-.39	-.56	-.40	.33	-.29	.29	-.23	-.39	-.25
sociable-unsociable	.44	.29	.14	.02	.34	.24	.27	.49	.47	.49
unstable-stable	.02	-.29	-.28	-.08	-.20	-.00	-.08	-.18	-.10	-.25
colorless-colorful	.20	-.01	-.06	-.07	.20	.02	.50	.19	-.22	.09
clean-dirty	.43	.62	-.10	-.07	-.30	.33	.16	.08	-.48	-.13
masculine-feminine	.06	-.04	.05	-.09	-.20	-.13	.02	.01	-.14	.08
weak-strong	.12	.04	-.08	-.02	-.03	.34	.20	.28	.12	.20
interesting-uninteresting	-.19	.23	-.02	-.26	-.11	.01	-.01	.02	.20	-.05
heavy-light	.05	.13	-.13	.15	.17	.09	.20	-.06	-.08	.01
active-passive	.40	.14	.03	.08	.12	.06	-.26	.10	.37	.25
negative-positive	-.06	.08	-.22	-.04	-.23	-.06	.02	-.11	-.19	-.14
excited-calm	-.03	-.08	-.10	-.07	-.27	.24	-.05	-.10	.10	.09
free-not free	.44	-.03	.18	.35	.46	-.02	.19	.49	-.01	.42
sharp-dull	-.21	.22	.07	-.38	.12	-.04	-.36	-.15	.22	-.14
graceful-awkward	.25	-.15	.05	.35	.36	-.00	-.20	-.03	.04	.20
bad-good	.11	-.05	-.08	.00	.15	-.13	-.21	-.03	.23	.09
large-small	-.02	-.02	.31	.07	.22	.21	.10	.24	.29	.11
wise-foolish	-.02	-.02	-.25	-.16	-.10	.01	-.06	-.02	-.23	-.02
beautiful-ugly	.06	-.32	.21	.37	-.02	.16	.27	.11	.09	.29
violent-gentle	-.22	-.30	.13	-.17	.19	-.10	-.12	-.31	.06	-.10
simple-complex	.68	.46	.54	.57	.58	.64	.59	.68	.13	.54
cowardly-brave	.19	.07	.36	.37	.19	.29	.06	.17	.10	.27
aimless-motivated	.07	.10	.36	.13	.35	.16	.19	.20	.01	.29
valuable-worthless	-.04	.14	-.04	.11	-.28	.03	.35	-.03	-.20	-.19
sad-happy	-.16	.04	-.15	-.20	-.23	-.27	-.13	-.31	.18	-.43
Percent of total concept variance accounted for	6.25	5.30	5.43	5.63	6.86	4.56	5.89	6.14	5.13	6.20

Table 7

Factorial Similarity Between the Concept "Me"

and All Other Concepts

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
People I Like	.96	.95	.88	.66	.52
Deaf	.96	.96	.82	.49	.46
Blind	.93	.89	.71	.53	.68
Stutterer	.98	.96	.82	.59	.50
Cerebral Palsy	.94	.92	.75	.61	.69
Mentally Ill	.97	.94	.79	.68	.48
Mentally Retarded	.97	.95	.86	.63	.82
Amputee	.98	.94	.90	.66	.15
Facially Disfigured	.96	.94	.93	.65	.77